



AIA Massachusetts  
A Chapter of  
The American Institute of Architects



Home Builders &  
Remodelers Association  
Massachusetts



MASSACHUSETTS  
FEDERATION OF  
BUILDING OFFICIALS



June 6, 2014

Senator Stephen M. Brewer, Senate Chairman  
Senator Jennifer L. Flanagan  
Senator Richard J. Ross

Representative Brian S. Dempsey, House Chairman  
Representative Stephen Kulik  
Representative Vinny deMacedo

Re: Conference Committee on the FY 2015 State Budget  
Sections 77, 78 & 79 of Senate Bill No. 2160 (Fire Sprinklers in One and Two-Family Homes)

Dear Members of the Conference Committee:

The undersigned organizations are all committed to the principle of a uniform State Building Code that ensures public safety, facilitates innovation in construction techniques, products and materials, promotes cost effectiveness and furthers energy efficiency in all buildings and structures in the commonwealth. It is with this principle in mind that we set forth below our objections to *Sections 77, 78 and 79 of Senate Bill No. 2160* that would amend G.L. c. 148 to require the installation of automatic sprinklers in new or substantially rehabilitated one and two-family dwellings, subject to local acceptance.

Following on the heels of the adoption of the “Stretch Energy Code” in 2009, the proposed “local option” fire sprinkler code further undermines the uniformity of the State Building Code. Moreover, we are strongly opposed to the adoption of construction codes through legislation, thereby circumventing the process and expertise of the State Board of Building Regulations and Standards (BBRS) within the Department of Public Safety.

In addition, mandating fire sprinklers will add substantial upfront cost to every newly constructed home and will require homeowners to incur ongoing costs to maintain these systems, with little evidence that the life-safety benefit to them of installing such systems is realistic or even measurable relative to their expense. Indeed, mandating the installation of fire sprinkler systems in one- and two-family homes could likely price many prospective homebuyers out of the market.

## Background

Prior to the early 1970s, Massachusetts had a costly and outdated building regulatory system. Each of the 351 cities and towns had its own building construction standards that were enforced by untrained and uncertified individuals.

A study done by the Department of Community Affairs during the administration of Governor Francis Sargent had concluded that a mandatory, uniform set of housing and building regulations were required to correct the then existing fragmented system. The study also recommended that such a uniform code be promulgated by a diverse group of construction industry professionals who could, in part, be responsible for allowing the use of new building materials and techniques that would facilitate the production of affordable housing without compromising public health and safety.

With the support of a broad coalition that included architects, engineers, builders, developers, housing advocates, local building officials, fire chiefs, the Massachusetts League of Women Voters and the League of Cities and Towns, the recommendations contained in that study were enacted into law as Chapter 802 of the Acts of 1972. That landmark legislation established the State Building Code Commission (the Board of Building Regulations and Standards was established as the successor to the commission by Chapter 348 of the Acts of 1984) whose members produced the first edition of the State Building Code that became effective on January 1, 1975.

The State Building Code (780 CMR) is a mandatory uniform code for the construction of all buildings and structures in the commonwealth. No city or town may impose more restrictive construction standards than set forth in the State Building Code without the prior approval of the BBRS. (*See* G.L. c. 143, §98).

During the course of the past thirty-nine years, Massachusetts has been recognized nationally for many innovations and advancements in the State Building Code and the regulation of building construction. Some of these innovations include:

- The early adoption of energy conservation/efficiency provisions
- The development of standards for the rehabilitation and reuse of existing buildings
- The development of fire safety requirements in buildings, including the mandatory installation of smoke detectors and the use of fire suppression systems
- The development of reasonable provisions for the housing of mentally ill and mentally retarded individuals in group residences
- The licensing of construction supervisors

In addition, Chapter 802 enabled the commonwealth to design and implement a program to educate and certify all local building officials and building inspectors where none had previously existed.

## **Outside Sections 77, 78 and 79**

### Uniformity

Most, but not all, of our organizations had opposed the adoption of the “Stretch Energy Code” by the BBRS. They did so because the “Stretch Energy Code” allowed cities and towns to adopt its provisions on a “local option” basis. The Home Builders and Remodelers Association of Massachusetts (HBRAMA) said at the time, that such an outcome—no matter how laudatory in its intent to promote energy conservation—would have the effect of undoing the uniformity of the State Building Code and will serve as a precedent for the BBRS to adopt other “local option” provisions, depending upon the lobbying strength of any particular manufacturer, business or interest group. Outside Sections 77, 78 and 79 of S. 2160 is proof of the prescience of its position.

The adoption of yet another “local option” code will further accelerate the return of the commonwealth to a fragmented building regulatory system such as existed prior to 1972. That would lead to confusion in

the design and construction industry, added time and delay in the design and construction of buildings, increased cost of construction to businesses and homebuyers, uneven code enforcement, a weakening of public safety standards and the arbitrary approval or denial of the use of certain materials or construction methods.

### Cost

In addition to the above-cited concerns, the HBRAMA, the Massachusetts Retail Lumber Dealers, and NAIOP Massachusetts, The Commercial Real Estate Development Association all oppose mandating the installation of fire sprinkler systems in new one and two-family homes because to do so will substantially increase the cost of building new homes in the commonwealth and serve as a barrier to homeownership for thousands of young families, first-time homebuyers and others. The State Fire Marshall has estimated in the past that requiring the installation of fire sprinklers will add approximately \$4,500 to \$6,500 to the cost of a new single-family home. That cost balloons to approximately \$8,000 to \$12,000, depending upon whether or not a tank system is needed.<sup>1</sup> The HBRAMA believes the actual average end cost to a new homebuyer will be far greater than that estimated by the State Fire Marshall.

As was noted in The 2009 Report Of The One And Two Family Residential Sprinkler Committee (OTFRC) of the State Board of Building Regulations and Standards, the cost of installing a residential sprinkler system depends greatly on a number of factors. For example, NFPA 13D recognizes a variety of permissible system types. Accordingly, the OTFRC report stated:

*“Fire Sprinkler design requirements and installation costs are influenced by the size and layout of the house and by water availability (volume flow rate and acceptable pressure). Water may be available from a municipal source or may have to be drawn from a well or from a stand-alone tank. Where water is available from a municipal source, fire sprinkler system design is presently further influenced by requirements (initial and possibly ongoing, “in perpetuity” monetary charges) of the local Water Purveyor who may additionally dictate a particular design over the numerous designs acceptable under NFPA 13D.”*

The cost of a residential sprinkler system is also affected by whether or not a stand-alone pump and tank and/or stand-alone pressured tank is required:

*“Stand-alone pump and tank and or stand-alone pressurized tanks providing the water source, flow rate and necessary pressure appear to cost in the \$2400 to \$4500 range (as reported by a particular vendor of such pump and tank systems – prices could be different for other manufacturers’ products) provided that supervision of the system is not imposed (NFPA 13D does not require supervision) and this cost is for the pump/tank/pressurized tank and not for the entire fire sprinkler system. If battery back-up of electric pumps is chosen (not required by the Standard), then applicable first costs do increase.”*

In addition, the OTFRC report identified a number of labor issues that will have a direct impact on the expense of designing and installing residential sprinkler systems:

*(a) The design of a residential fire sprinkler system invokes the practice of engineering and a Massachusetts-Registered Professional Engineer, competent in the field, is*

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<sup>1</sup> Report of the NFPA that is based upon cost data gathered from the town of North Andover relative to three single-family homes ranging in size from 3,084 to 5,422 square feet of living space.

*required to design the fire sprinkler system except where the provisions of MGL c.112 § 81R apply.*

- (b) Multipurpose piping systems, believed to be the least expensive fire sprinkler systems, cannot be readily installed in Massachusetts as dual licensing is required for installation of the potable system (a Massachusetts-licensed Plumber) and concurrent capturing of the fire sprinkler system (a Massachusetts-licensed Sprinkler Contractor) – this legitimate labor issue invariably results in the fire sprinkler system, within the building, being a separate system from the potable system.*
- (c) Municipality-approved “drain layers” generally are not Massachusetts-licensed Sprinkler Contractors, yet, where the fire sprinkler system is independent of the potable water system (starting at the street), a Massachusetts-licensed Sprinkler Contractor (not a “drain layer”) is presently statutorily-required to oversee the fire main installation (MGL c.146 § 84).*

Finally, the OTFRSC found that fees that may be imposed by a municipality or other water purveyor would influence both the cost of installing and maintaining a residential sprinkler system:

*“Fees presently imposed by Water Purveyors are variable from community to community and fall into essentially three categories; one of fixed costs associated with installing fire main and/or supporting a “water development fee”; one of continuing, “in perpetuity” costs for the right to retain the fire sprinkler system and another fee associated with backflow preventer testing and where such backflow preventer testing may be required one or more times per year.”*

The real world experience of the members of the HBRAMA, based upon a survey of its members installing NFPA 13D systems, found that the average cost to the homebuyer in Massachusetts was \$13,574.59 per home or \$4.02 per sq. ft. If most communities who adopt the mandate of fire sprinklers in one and two-family dwellings also impose fees such as those identified above, the average cost to a new homebuyer could be thousands more.

### BBS White Paper

The State Board of Building Regulations and Standards issued a white paper for public comment on May 13, 2014 regarding fire sprinklers systems in certain residential structures. Entitled, “The Cost and Effectiveness for Health, Safety, and Security of Fire Alarm systems and Fire Sprinkler Systems in 3 to 6 Unit Residential Buildings,” this 32-page document exhaustively examines a variety of issues attendant to the installation of fire sprinklers in residential buildings, including: trends in home values versus income and affordability of housing; cost of fire protection systems; mortality risks associated with unintentional fatalities, during transport and non-transport human activity, including the effectiveness of fire sprinkler systems in Massachusetts; and causes of residential fire fatalities.

The purpose of the white paper is to,

*“assist the BBS in meeting its statutory obligation to continually review the cost of construction and to assure that for all building code requirements there is commensurate life safety benefit. Onerous and costly code requirements too often have a negative effect, for example: the owner will take units out of service which further exacerbates an already tight housing market; or the owners will do cosmetic touch up and avoid high cost items that the cost may require. Thus, if the life safety benefit does not justify the cost then it is*

*the responsibility of the BBRS to explore alternatives such as reducing or eliminating the requirement.”<sup>2</sup>*

Finally, the paper sets forth a series of conclusions and recommendations for which the BBRS is seeking “widespread public comment” so that it can protect the interests of consumers and maintain an independent and reasonable approach to the promulgation of building code requirements. Accordingly, the Legislature should refrain from enacting any further mandates relative to fire sprinklers systems until the 60-day public comment has closed and the BBRS has had an opportunity to evaluate and act on those comments.

#### Other states

The International Code Council, which was established in 1994 as a non-profit organization dedicated to developing a single set of comprehensive and coordinated national model construction codes and has at either the state or jurisdictional level had their codes adopted in all 50 states plus the District of Columbia, amended the International Residential Code (IRC) in 2009 to require the installation of fire sprinklers in one and two-family homes. Since that time, 36 states have affirmatively taken action through either legislation or regulation to ensure that residential sprinklers remain optional for homebuilders and homebuyers. Only two states – California and Maryland – have adopted the 2009 IRC’s mandate for fire sprinklers in one and two-family homes. No action was necessary in the remaining 12 states to maintain the optional status of sprinklers in one and two-family homes. Consequently, Massachusetts is not an outlier in regard to sprinklers, but instead stands with the overwhelming majority of states that agree they need not be mandated in one and two-family homes.

#### Similar legislation

The Conference Committee should take note that a number of bills (H.2121, H. 2123, H. 2129) were considered this session by the Joint Committee on Public Safety and Homeland Security to legislatively mandate such systems in one and two-family homes either by local option or statewide requirement. The committee, as it had done repeatedly in the past, recommended that all those bills be sent to “study.”

#### Beacon Street Fire

The recent tragic death of two Boston firefighters in the Beacon Street fire has been cited by some as a reason to mandate sprinklers in one and two-family homes. However, that fire was in a three-unit residence for which fire sprinkler systems have long been required. The horrific Worcester warehouse fire of several years ago that took the life of other firefighters was, again, in the type of structure for which sprinklers have also been required.

A review of the data from the Massachusetts Fire Incident Reporting System, as well as the U.S. Fire Administrator 2013 Report issued by the Federal Emergency Management Administration, demonstrate that fire sprinklers in one and two-family homes are not needed for the protection of the lives of the occupants of those residences or firefighters. Electric hardwired smoke detectors save lives and are extremely cost effective. Fire sprinklers in one and two-family homes are not justified as a matter of cost or public safety.

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<sup>2</sup> “White Paper The Cost and Effectiveness for Health, Safety, and Security of Fire Alarm Systems and Fire Sprinkler Systems in 3 to 6 Unit Residential Building” Page 41.

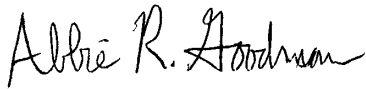
## Conclusion

Our organizations have consistently supported amendments to the State Building Code that enhance life-safety in residential structures where there benefits clearly exceed their costs and adoption would not undermine housing affordability. That is why we have endorsed every amendment to the State Building Code relative to the installation of smoke detectors. Smoke detectors are an effective, proven and cost-effective technology that saves lives. The installation of sprinkler systems in one- and two-family homes is complicated and costly, and of only incremental value in terms of protecting the life of the occupants of such residences.

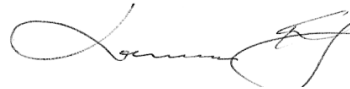
We respectfully urge the Conference Committee to strike Outside Sections 77, 78 and 79 of S. 2160 in its final report on the FY 2015 budget.

Thank you for your consideration of our views.

Respectfully,



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David Begelfer, Chief Executive Officer  
NAIOP Massachusetts, The Commercial Real Estate  
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C: Honorable Therese Murray, President of the Senate  
Honorable Robert A. DeLeo, Speaker of the House of Representatives